

2020 NSDUH, Supporting Statement
Attachment A – Sample Design Report

SAMPLE DESIGN

2020 National Survey on Drug Use and Health Sample Design

The 2020 National Survey on Drug Use and Health (NSDUH) is a continuation of a four-year sample design which was introduced by the Center for Behavioral Health Statistics and Quality (CBHSQ) in 2014. Similar to previous NSDUHs, the 2020 NSDUH sample design is a stratified, multi-stage area probability design. The sample design provides for estimates by state in all 50 states and the District of Columbia (DC). As shown in **Table 1**, the main 2020 survey will have a sample designed to yield 4,560 completed interviews in California; 3,300 completed interviews each in Texas, New York, and Florida; 2,400 completed interviews each in Illinois, Pennsylvania, Ohio, and Michigan; 1,500 completed interviews each in Georgia, North Carolina, New Jersey, and Virginia; 967 completed interviews in Hawaii; and 960 completed interviews in each of the remaining 37 states and DC. In addition, the sample will be expanded by 1,500 interviews in the first six months of the survey year to support the Clinical Validation Study (CVS). Therefore, the total national target sample size for the 2020 NSDUH is 69,007 completed interviews. The sample will be selected from 6,000 area segments which vary in size according to state. For the 2020 NSDUH, each state’s main sample will be allocated to age groups as follows: 25 percent 12 to 17, 25 percent 18 to 25, 15 percent 26 to 34, 20 percent 35 to 49, and 15 percent 50 or older. The CVS sample expansion will be allocated proportionally to age groups.

Table 1. Sample Sizes and Projected Respondents by State and Age Group, 2020 NSDUH

State	Age 12–17	Age 18–25	Age 26–34	Age 35–49	Age 50+	Total Age 12+	State Sampling Regions (SSRs)	Segment Size	No. of Segments
Total Population	17,015	17,066	10,344	13,836	10,746	69,007	750		6,000
CA	1,140	1,140	684	912	684	4,560	36	15.833	288
TX, NY, FL	825	825	495	660	495	3,300	30	13.75	240
IL, PA, OH, MI	600	600	360	480	360	2,400	24	12.5	192
GA, NC, NJ, VA	375	375	225	300	225	1,500	15	12.5	120
HI	242	242	145	193	145	967	12	10.07	96
Remaining 37 States and DC	240	240	144	192	144	960	12	10	96
Q1 and Q2 Sample Expansion (CVS)	138	189	218	335	620	1,500			

Beginning in 2014 and continuing with the 2020 NSDUH, the sample will be designed to yield a minimum of 200 completed interviews in Kauai County, Hawaii over a three-year period. This

will allow for Kauai County to be included as a separate entity in the production of substate estimates that are produced biennially and typically based on three years of data. To achieve this goal while maintaining precision at the state level, Kauai County will be treated separately from the remainder of Hawaii for sample allocation and sample size management purposes. The annual sample in Hawaii will consist of 67 completed interviews in Kauai and 900 completed interviews in the remainder of the state, for a total of 967 completed interviews each year.

Finally, the 2020 design includes the selection of Census block groups at the second stage of selection. This stage of selection was included beginning in 2014 to facilitate moving to an address-based sample (ABS) design in the future, if desired. Compared to geocoding at the Census block level, geocoding accuracy improves significantly at the Census block group level in both rural and urban areas. Thus, in an ABS design, Census block groups would serve as geographic clusters in areas with sufficient mailing address coverage. The selection of Census tracts at the first stage of selection and Census block groups at the second stage has the potential to reduce sampling variance by controlling the distribution of selected areas and reducing the chance of selecting neighboring and possibly similar areas within tracts and block groups. In addition, the merging of NSDUH data to external data sources for future analysis purposes is simplified when sampled areas are contained within tract and block group boundaries to the extent possible.

First, Second, and Third Stages of Selection: Census Tracts, Census Block Groups and Segments

A coordinated sample for the period 2014-2017 was selected down to the area segment level as a means of coordinating the overlap of sample areas from year to year. In anticipation of the next decennial census data being unavailable, a large reserve sample was also selected and is available for use in 2018 through 2020.

The “first level” of stratification within the coordinated design is states. The larger sample sizes obtained at the state level along with small area estimation (SAE) techniques or direct estimation techniques will enable the development of estimates for all states, for several demographic subgroups within each state (e.g., age group and gender), for some Core Based Statistical Areas (CBSAs), and for other small areas.

The “second level” of stratification within the coordinated design was defined as contiguous geographic areas (groups of Census tracts) within each state. Within each state, state sampling regions (SSRs) are of approximately equal size in terms of the population and allocated state sample, except in Hawaii where Kauai County is its own SSR and the remainder of the state is divided into equal-sized regions.

The design of the first stage of selection began with the construction of an area sample frame that contained one record for each census tract in the United States. If necessary, census tracts were aggregated until each tract had a minimum number of dwelling units. In California, Texas, New York, Florida, Illinois, Pennsylvania, Ohio, Michigan, Georgia, North Carolina, New Jersey, and Virginia, this minimum size requirement was 250 dwelling units in urban areas and 200 dwelling units in rural areas. The basis for the differing minimum dwelling unit requirement in urban and

rural areas is that it is more difficult to meet the requirement in rural areas, and 200 dwelling units are sufficient to support one field test and two main study samples. In the remaining states and DC, the number of completed interviews per sampled area is smaller and, therefore, fewer dwelling units are needed. In these states, the minimum requirement was 150 dwelling units in urban areas and 100 dwelling units in rural areas. After primary sampling units (PSUs; one or more census tracts) were formed, a sample was selected within each SSR with probabilities proportionate to a composite size measure and with minimum replacement. Additional implicit stratification was achieved by sorting the first-stage sampling units by a CBSA/SES (socioeconomic status) indicator¹ and by percent non-Hispanic white prior to selection.

For the second stage of selection, adjacent Census block groups were aggregated within selected PSUs as necessary to meet the minimum dwelling unit requirements (150 or 250 dwelling units in urban areas and 100 or 200 dwelling units in rural areas, according to state). After the resulting secondary sampling units (SSUs; one or more census block groups) were formed, one SSU was selected per sampled PSU with probability proportionate to a composite size measure.

For the third stage of sampling for the coordinated sample, each of the selected Census block groups was partitioned into clusters of dwelling units by aggregating adjacent Census blocks. Consistent with the terminology used in previous surveys, these geographic clusters of blocks are referred to as *segments*. Segments were formed so that they contain the same minimum number of dwelling units as the PSU (i.e., Census tracts) and SSU (i.e., Census block groups) to which they belong. That is, area segments contain at least 150 or 250 dwelling units in urban areas and 100 or 200 dwelling units in rural areas according to state. Segments were constructed using 2010 Decennial Census data supplemented with 2013 population projections obtained from outside sources. A sample *dwelling unit* in the survey refers to either a housing unit or a group quarters listing unit such as a dormitory room or a shelter bed.

One segment was selected within each selected Census block group with probability proportionate to a composite size measure. As mentioned previously, segments were formed so that they will contain sufficient numbers of dwelling units to support one field test and two annual survey samples. This allows half of the segments used in any given year's main sample to be used again in the following year as a means of improving the precision of measures of annual change. This also allows for any special supplemental sample or field test that SAMHSA may wish to conduct within the same segments.

A sample of 8 segments per SSR will be used for the 2020 survey year. These 8 segments will be randomly assigned to quarters and to two panels within each quarter. The panels used in the 2020 survey will be designated as panels 7 and 8. Panel 7 segments have been used for the 2019 survey and will be used for the second time in the 2020 survey. The panel 8 segments will be used for the 2020 and 2021 surveys. Dwelling units that were not selected for the 2019 survey will be eligible for selection in the panel 7 segments in 2020.

¹ Four categories are defined as: (1) CBSA/low SES, (2) CBSA /high SES, (3) Non-CBSA /low SES, and (4) Non-CBSA /high SES.

Approximately one-fourth of the main sample of respondents will be collected from each calendar quarter.² This design feature will help control the influence of seasonal variation on drug use prevalence estimates and other important survey outcome measures of interest.

Fourth Stage of Selection: Listed Lines

Before any sample selection within selected segments can proceed, specially trained field household listers will list all dwelling units and potential dwelling units within each selected area segment. A dwelling unit is either a housing unit for a single household or one of the eligible noninstitutional group quarters listing units that are part of the defined target population. The listings will be based primarily on observations of the area segment and may include vacant dwelling units and units that appear to be dwelling units but may actually be used for nonresidential purposes. The objective of the listing is to attain as complete a listing of eligible residential addresses as possible; any false positives for residences will be eliminated during the household screening process after the sample is selected.

The sampling frame for the fourth stage of sample selection will be the lines of listed dwelling units and potential dwelling units. After accounting for eligibility, nonresponse, and the fifth-stage sample selection procedures, it was determined that roughly 233,248 lines will need to be selected in order to obtain a sample of 69,007 responding persons distributed by state and age-group as shown in **Table 1**.

Fifth Stage of Selection: Persons

After dwelling units are selected within each segment, an interviewer will visit each selected dwelling unit to obtain a roster of all persons residing in the dwelling unit. This roster information will be used to select 0, 1, or 2 persons for the survey. Sampling rates will be pre-set by age group and State. Roster information will be entered directly into the electronic screening instrument which will automatically implement this fifth stage of selection based on the State and age group sampling parameters.

One exciting consequence of using an electronic screening instrument in the survey is the ability to efficiently sample from all possible pairs of respondents within a dwelling unit while preserving the target sampling rates for individuals within 5 age groups (12 to 17, 18 to 25, 26 to 34, 35 to 49, and 50 or older). Using an adaptation of Brewer's method for samples of size 2, a sample of 0, 1, or 2 persons will be selected from each dwelling unit. As a consequence, *any* two survey-eligible people within a dwelling unit will have a known chance of being selected, that is, all survey eligible pairs of people will have some nonzero chance of being selected. This feature of the design is of interest to survey researchers because for example, it will allow analysts to examine how the drug use propensity of one individual in a family will relate to the drug use propensity of another family member residing in the same dwelling unit (e.g., the relationship of drug use between a parent and child).

² The sample will be expanded by 1,500 interviews in the first six months of the survey year. The additional sample will be divided equally among the first two calendar quarters.

As illustrated in **Table 2**, at the fifth stage of selection, roughly 100,746 people will be selected from within 143,255 screened and eligible dwelling units. Assuming a 73% screening completion rate and a 68% interview completion rate, these sample sizes are sufficient to obtain the desired 69,007 person respondents.

Table 2. Summary of 2020 Main Study Design

Statistic	2020 NSDUH	2020 Rate
State Sampling (SS) Regions	750	
Segments	6,000	
Selected Lines	233,248	
Eligible Dwelling Units	196,240	0.84
Completed Screening Interviews	143,255	0.73
Selected Persons	100,746	0.70
Completed Interviews	69,007	0.68

Expected Precision of Survey Estimates

The multistage, stratified 2020 survey design has been designed to achieve acceptable precision for various person subpopulations of interest. The allocation of persons per state and age group (12-17, 18-25, 26-34, 35-49, and 50 or older) was also taken as a requirement to support direct estimation in some large sample states and SAE in the remaining states. **Table 3** shows the projected relative standard errors for selected prevalence measures.

Table 3. Estimated Prevalences and Relative Standard Errors for Key Measures by Demographic Domain

Measure	Domain	Prevalence	Projected RSE
Past Month Alcohol Use	12+	0.5167	0.0071
Past Month Alcohol Use	12-20	0.1967	0.0163
Past Month Alcohol Use	50+	0.5066	0.0124
Past Month Alcohol Use	API,12+	0.3877	0.0419
Past Month Alcohol Use	AIAN, 12+	0.4063	0.0755
Past Month Alcohol Use	Pregnant, 12-44	0.1143	0.2017
Past Month Binge Alcohol Use	18-25	0.3688	0.0136
Past Month Binge Alcohol Use	12+	0.2449	0.0116
Past Month Marijuana Use	12+	0.0955	0.0180
Past Month Marijuana Use	12-17	0.0647	0.0389
Past Month Marijuana Use	18-25	0.2213	0.0193
Past Month Marijuana Use	50+	0.0487	0.0546
Past Month Marijuana Use	API,12+	0.0405	0.0996
Past Month Marijuana Use	AIAN, 12+	0.1547	0.1008
Past Month Marijuana Use	Pregnant, 12-44	0.0705	0.2359
Past Month Cigarette Use	12-17	0.0316	0.0584
Past Month Cigarette Use	12+	0.1789	0.0153
Past Month Pain Reliever Misuse	18-25	0.0185	0.0718
Past Month Pain Reliever Misuse	12+	0.0119	0.0513
Past Year Alcohol Disorder	12+	0.0533	0.0244
Past Year Illicit Drug Disorder	12+	0.0277	0.0311
Past Year Substance Use Disorder	50+	0.0405	0.0595
Past Year Specialty Substance Use Treatment	12+	0.0093	0.0596
Past Year SMI	18+	0.0453	0.0288
Past Year MDE	18+	0.0707	0.0229

Note: Prevalence estimates are based on data from the 2017 NSDUH. Projected RSEs were determined using 2014 through 2020 state and age sample allocations in a variance component model. All model components were updated using 2017 NSDUH data.

Clinical Validation Study

To support the CVS, the 2020 NSDUH sample will be expanded by 1,500 interviews in the first six months of the survey year. The additional sample will be allocated to state and age groups in approximately the same proportions as in the CVS sample for the data collection quarters when the CVS is implemented. The population total for the expanded sample will match the census total after application of the appropriate weights.

During the NSDUH interview, a probability subsample will be selected from the full expanded sample by means of a stratified random sample design. The stratified design will consist of eight strata constructed from all combinations of past year cigarette, alcohol, and marijuana use. Some

NSDUH respondents in each stratum will *not* be selected to allow for adjusting the weights of the remaining NSDUH sample in the two quarters in which the subsampling for the CVS occurs. To the extent possible (while assuring that not all individuals in a stratum are selected), probability proportional to size sampling will be used to select respondents within strata. The resulting CVS subsample will be approximately proportional by state and age.

NSDUH respondents selected for the CVS subsample will be administered new DSM-5 Substance Use Disorder modules. At the end of the NSDUH interview, these respondents will be invited by the interviewer to participate in a follow-up clinical interview by telephone. Assuming a 96 percent eligibility rate, an 86 percent agreement rate, and a 64 percent clinical interview completion rate, the 1,500 main interview respondents are expected to yield approximately 800 completed clinical interviews.

2020 NSDUH, Supporting Statement
Attachment L – Interview Incentive Receipt

Interview Incentive Receipt

U.S. Department of Health and Human Services

and

RTI International

thank you for participating in the 2020 National Survey on Drug Use and Health.

In appreciation of your participation in this important study, you are eligible to receive \$30 in cash.

Since maintaining the confidentiality of your information is important to us, your name will not be entered on this form. However, the interviewer must sign and date this form to certify you received (or declined) the cash incentive.

_____ Interviewer	_____ Date	_____ Case ID
<input type="checkbox"/> Accepted Cash Incentive		<input type="checkbox"/> Declined Cash Incentive

If you ever feel that you need to talk to someone about mental health issues, you can call the National Lifeline Network. Counselors are available to talk at any time of the day or night and they can give you information about services in your area.

1-800-273-TALK or 1-800-273-8255

1-888-628-9454 (Spanish)

<http://suicidepreventionlifeline.org/>

If you ever feel that you need to talk to someone about drug use issues, you can call the Substance Abuse and Mental Health Services Administration's Treatment Referral Helpline. This is a 24-hour service that will help you locate treatment options near you.

1-800-662-HELP or 1-800-662-4357

1-800-487-4889 (TDD)

<http://findtreatment.samhsa.gov>

Disposition: Top copy to Respondent, yellow to Field Supervisor, pink to Field Interviewer.

Recibo de incentivo por la entrevista

El Departamento de Salud y Servicios Humanos de los Estados Unidos

y
RTI International

le agradecen su participación en la Encuesta Nacional sobre la Salud y el Consumo de Drogas del año 2020

Como muestra de nuestro agradecimiento por su participación en este importante estudio, usted tiene derecho a recibir \$30 dólares en efectivo.

Debido a que la privacidad de sus datos es importante para nosotros, su nombre no aparecerá en este documento. Sin embargo, el entrevistador debe escribir la fecha en este recibo y firmarlo para certificar que usted recibió (o rechazó) el incentivo en efectivo.

_____ Entrevistador(a) <input type="checkbox"/> Aceptó el incentivo en efectivo	_____ Fecha	_____ No. de identificación del caso (ID) <input type="checkbox"/> Rechazó el incentivo en efectivo
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Si alguna vez sintiera la necesidad de hablar con alguien acerca de asuntos relacionados con la salud mental, puede llamar a la Red Nacional de la Línea de la Vida (National Lifeline Network). Consejeros están disponibles para hablarles a cualquier hora del día o de la noche, y ellos le pueden dar información acerca de los servicios que se ofrecen en su zona.

1-888-628-9454 (español)
1-800-273-8255 o 1-800-273-TALK (inglés)
<http://suicidepreventionlifeline.org>

Si alguna vez sintiera la necesidad de hablar con alguien acerca de asuntos relacionados con las drogas, puede llamar a la Línea de ayuda de referencias para servicios de tratamiento de la Administración de Servicios de Abuso de Sustancias y Salud Mental. Este centro atiende las 24 horas del día y allí le darán información sobre los lugares cercanos a usted donde se ofrecen servicios de tratamiento.

1-800-662-4357 o 1-800-662-HELP
1-800-487-4889 (línea TDD: para personas con problemas auditivos)
<http://findtreatment.samhsa.gov>

Distribución: hoja blanca: participante; copia amarilla: supervisor(a); copia rosada: entrevistador(a).

2020 NSDUH, Supporting Statement
Attachment S – Certificate of Participation



Certificate of Participation

The U.S. Department of Health and Human Services and RTI International would like to thank

[Participant's Signature]

for participating in the **National Survey on Drug Use and Health**

on

[Date of Interview]

Field Interviewer

FI ID #

Ilona S. Johnson

Ilona S. Johnson,
National Field Director
RTI International
3040 Cornwallis Road
Research Triangle Park, NC 27709



This document certifies that the above named individual participated in NSDUH, a voluntary survey for the U.S. Department of Health and Human Services. Across the country, some participants approach their school teachers or other group leaders to ask about possible special community service credit as they completed this important national survey. The time commitment for participation in this survey is between 1 and 2 hours. A copy of the NSDUH brochure, which explains the study in more detail, should accompany this certificate. If you need further information, contact the National Field Director, Ilona Johnson, at (800) 848-4079.